

DETAILED DESCRIPTION

[0045] Description and Operation of Invention

[0046] The present invention will now be described with reference to the accompanying drawings, which are provided as illustrative examples of preferred embodiment of the present invention.

[0047] Figure 1 depicts a preferred embodiment of a system performing the functions stated in the present invention. The system includes a sender's computer S, a recipient's computer R, the sender's SMTP email server MO, the recipient's email server MI, and the Email Chief C for registration/authentication purposes. The present invention can be deployed at the recipient's email server MI or at the recipient's email client software R, and at the Email Chief C. The Email Chief C has the function for registration, authentication, and maintenance of database.

[0048] The recipient's communications device may be any communications device capable of receiving electronic mail or instant messages, such as a computer running mail client software, a Web-enabled wireless telephone, a wireless personal digital assistant, a pager, or the like. For discussion purposes, the following discussion considers a general-purpose computer running mail client software.

[0049] In this preferred embodiment, the anti-spam points are categorized into four types: Pass points, Dom points, Safe points, and Ad points. The Pass points and Dom points are issued free of charge, while the Safe points and Ad points are required to be purchased.

[0050] Pass points are typically used by people who could be described as "normal email users." These are people who do not send out huge volume of emails. Any email user could obtain Pass points free of charge after completing a registration form online.

[0051] Dom points are typically issued by domain owners to users belonging to their domain who have the need to send large quantities of emails to email addresses within their own domain. Emails that are sent using Dom points could only be received by email addresses having the same domain name as the sender. For example, using Dom points, an email from john@aaa.com could be sent to mary@aaa.com, and not to jane@bbb.com.

- [0052] Safe points are typically purchased and used by businesses or by people who sends out large quantities of solicited emails. Safe points guarantee that the emails would get delivered. Examples of solicited emails include newsletters, automatic confirmation email for purchases, email replies from customer service representatives, car rental reminders, bill payment notices, etc. For each email, the senders would need to purchase an amount of Safe points adequate to cover for the number of emails addresses they wish to send to.
- [0053] Purchased Ad points are typically used by reputable email marketers who are mindful of the negative effects of spamming their potential customers. For each advertisement email, the email marketer would set a limit on the number of Ad points offered to the recipients. The advertisement email would only be delivered to recipients who have set a threshold value for charging paid Ad Points that is lower than the value of Ad points offered.
- [0054] In terms of its function for registration, the Email Chief C can send registration requests to email senders that are not in the current pool of registered users, can communicate with email senders, can issue a fingerprint key for each email address after a successful registration, can issue a certain amount of free Pass Points for the email address, and can replenish or infuse it with more Pass Points after a fixed or varied period of time. These free Pass Points will be deducted by a fixed or varied number each time the user sends out an email to the email servers adopting the present invention. These free Pass Points will be automatically replenished for the user after a fixed or varied period of time has elapsed. The amount of free Pass Points is chosen such that they are ample for normal email users, and at the same time not ideal for spamming (According to BrightMail Inc., an average spammer sends out 250,000 emails each day, so the chosen amount of free Pass points can be very large). For example, if one Pass point is good for sending an email to a single email address, a user is issued 3,000 Pass points per calendar month subject to the following usage rate limitations: 50 Pass points per minutes, limited to 200 Pass points per any 10-minute period, 500 Pass points per calendar day, and 1500 Pass points per calendar week.
- [0055] Those organizations and users having a legitimate need to send more emails than the Pass Point quota can purchase Safe Points to meet their high volume needs. The cost of Safe Points is refundable to the buyer once the email bearing the Safe Points, or Safe Email, has been accepted by the email recipient. On the other hand, if the recipient claims that the Safe email is spam, the Safe Points used for delivering the email to that recipient are forfeited.

- [0056] Those advertisers having a need to send out unsolicited commercial emails can purchase Ad Points from the company running the Email Chief. These paid Ad Points are different from the free Pass Points in that they may be deducted by a threshold value set by the recipient. The Email Chief would keep a record of which email addresses have received paid commercial emails, and it can reward money, goods, and/or services to these recipients when they redeem their earned Ad Points.
- [0057] In terms of its function for authentication, the Email Chief can communicate with the recipient's email server or email client to compare the sender's fingerprint key with the record in the databases, can deduct the appropriate types of anti-spam points from the email senders, and can command the recipient's email server or email client to make the verified email available to the recipient.
- [0058] With reference to figure 1, in this embodiment the present invention is installed on: a) the sender S to provide the convenience for inserting the fingerprint key automatically or manually into the email message; b) the Email Chief C to provide functions such as user registration, authentication, and maintenance of databases; and c) the recipient's incoming email server MI to provide functions such as communication with Email Chief C, taking instructions to hold, delete, or deliver emails to the Recipient R. In step 1, the sender S sends out the email to the outgoing email server MO; in step 2, the outgoing server MO transmits the email to the recipient's incoming email server MI; before making the email available for the recipient R, the incoming server MI contacts the Email Chief C in step 3, by sending an encoded string which contains the sender's profile including, but not limited to the sender's email address, the recipient's email address, MI's identification code, the sender's fingerprint key (if provided); if the Email Chief C can match the fingerprint key with the one in the record for the given email address, it will, in step 4, deduct the appropriate anti-spam points of the sender S and send an acknowledgment to the incoming email server MI or the recipient's email client software to instruct it to make the email available for downloading; in step 5, when the recipient R checks his or her email, the email will be delivered to him or her. On the other hand, if in step 3, the Email Chief C can not find the fingerprint key, or the fingerprint key is invalid, the Email Chief C will send an email to the original email sender S and will ask S to register at C; the registration request is sent through steps 6 and 7; in step 8, the sender S goes to the Email Chief C to get registered; the Email Chief C will offer the sender a unique fingerprint key and some free

Pass Points. After a successful registration, the Email Chief C can then continue with step 4 to acknowledge making the email available for downloading at the incoming email server MI; if in step 3, the sender runs out of free anti-spam points, he or she can elect to purchase Ad Points or Safe Points, depending on his or her needs. If step 8 is never carried out, and the email server MI is not able to receive an acknowledgment, the email server MI or email client software can elect to delete the email after a certain period of time or to add a flag to the message and let the recipient choose further actions.

[0059] A few scenarios are described in detail with reference to Figure 1.

[0060] In one scenario, sender S has not registered. With reference to figure 1, in step 1, the sender S sends the email to the outgoing email server MO; in step 2, the outgoing server MO transmits the email to the recipient's incoming email server MI; before making the email available for the recipient R, the incoming server MI contacts the Email Chief C in step 3, by sending an encoded string which contains the sender's email address, the recipient's email address, MI's identification code; in this scenario the Email Chief C can not find the fingerprint key, and therefore sends an email to the original email sender S asking S to register at C; the registration request is sent through steps 6 and 7; in step 8, the sender S goes to the Email Chief C to get registered; the Email Chief C will offer the sender a unique fingerprint key and some free Pass Points. After a successful registration, the Email Chief C can then continue with step 4 to acknowledge making the email available for downloading at the incoming email server MI. If step 8 is never carried out or not carried out satisfactorily, and the email server MI is not able to receive an acknowledgment, the email server MI or email client software can elect to delete the email after a certain period of time or to add a flag to the message and let the recipient choose further actions.

[0061] In a second scenario, the sender S is a registered user. With reference to figure 1 again, in step 1, the sender S sends the email to the outgoing email server MO; in step 2, the outgoing server MO transmits the email to the recipient's incoming email server MI; before making the email available for the recipient R, the incoming server MI contacts the Email Chief C in step 3, by sending an encoded string which contains the sender's email address, the recipient's email address, MI's identification code, the sender's fingerprint key (if provided); if the Email Chief C can match the fingerprint key with the one in the record for the given email address, it will, in step 4, deduct the appropriate amount of Pass points of the sender S and send an

acknowledgment to the incoming email server MI or the recipient's email client software to instruct it to make the email available for downloading; in step 5, when the recipient R checks his or her email, the email will be delivered to him or her. On the other hand, if in step 3, the Email Chief C can not find the fingerprint key, or the fingerprint key is invalid, the Email Chief C will send an email to the original email sender S asking S to validate the fingerprint key at C; the validation request is sent through steps 6 and 7; in step 8, the sender S accesses the Email Chief C's web site and enters the correct fingerprint key. After a successful validation, the Email Chief C can then continue with step 4 to acknowledge making the email available for downloading at the incoming email server MI; if in step 3, the sender runs out of free Pass Points, he or she can elect to purchase Ad Points or Safe Points, depending on his or her needs. If step 8 is never carried out or not carried out satisfactorily, and the email server MI is not able to receive an acknowledgment, the email server MI or email client software can elect to delete the email after a certain period of time or to add a flag to the message and let the recipient choose further actions.

[0062] In a third scenario, sender S has purchased Safe points. With reference to figure 1 furthermore, in step 1, the sender S sends the email to the outgoing email server MO; in step 2, the outgoing server MO transmits the email to the recipient's incoming email server MI; before making the email available for the recipient R, the incoming server MI contacts the Email Chief C in step 3, by sending an encoded string which contains the sender's email address, the recipient's email address, MI's identification code, the sender's fingerprint key (if provided); if the Email Chief C can match the fingerprint key with the one in the record for the given email address, it will, in step 4, deduct from sender S' account the appropriate amount of Safe points, and send an acknowledgment to the incoming email server MI or the recipient's email client software to instruct it to make the email available for downloading; in step 5, when the recipient R checks his or her email, the email will be delivered to him or her. On the other hand, if in step 3, the Email Chief C can not find the fingerprint key, or the fingerprint key is invalid, the Email Chief C will send an email to the original email sender S asking S to validate the fingerprint key at C; the validation request is sent through steps 6 and 7; in step 8, the sender S accesses the Email Chief C's web site and enters the correct fingerprint key. After a successful validation, the Email Chief C can then continue with step 4 to acknowledge making the email available for downloading at the incoming email server MI; if in step 3, the sender runs out of Safe points, the Email Chief C will send an email to the original email sender S asking S to purchase Safe points; the validation request is sent

through steps 6 and 7; in step 8, the sender S accesses the Email Chief C's web site and buys more Safe points. After acquiring more Safe points, the Email Chief C deducts the appropriate amount of Safe points from S's account, and then continues with step 4 to acknowledge making the email available for downloading at the incoming email server MI. If step 8 is never carried out or not carried out satisfactorily, and the email server MI is not able to receive an acknowledgment, the email server MI or email client software can elect to delete the email after a certain period of time or to add a flag to the message and let the recipient choose further actions.

[0063] In a fourth scenario, sender S has purchased Ad points. With reference to figure 1 yet again, in step 1, the sender S sends the email to the outgoing email server MO; in step 2, the outgoing server MO transmits the email to the recipient's incoming email server MI; before making the email available for the recipient R, the incoming server MI contacts the Email Chief C in step 3, by sending an encoded string which contains the sender's email address, the recipient's email address, MI's identification code, the sender's fingerprint key (if provided); if the Email Chief C can match the fingerprint key with the one in the record for the given email address, and verifies that the limit on the number of Ad points offered to the recipients meets or exceeds the threshold value for charging paid Ad Points set by the recipient R, then C deduct from sender S' account the number of Ad points that matches R's threshold value, and credits them to R's account. In step 4, C then send an acknowledgment to the incoming email server MI or the recipient's email client software to instruct it to make the email available for downloading; in step 5, when the recipient R checks his or her email, the email will be delivered to him or her. If, in step 3, C verifies that the limit on the number of Ad points offered to the recipients does not meet or exceed the threshold value for charging paid Ad Points set by the recipient R, then C send a command, in step 4, to the incoming email server MI or the recipient's email client software to instruct it to delete the email. On the other hand, if in step 3, the Email Chief C can not find the fingerprint key, or the fingerprint key is invalid, or Ad points is depleted or inadequate, the Email Chief C will, in step 4, send a command to the in incoming email server MI or the recipient's email client software to instruct it to delete the email. In the case where Ad points is depleted, in step 5, C would send an email to S notifying that Ad points ran out and to provide a link to a web site for accessing a detailed report on this email advertisement campaign.

[0064] In a fifth scenario, the sender S is a registered user and has acquired Dom points. With reference to figure 1 once more, in step 1, the sender S sends the

email to the outgoing email server MO; in step 2, the outgoing server MO transmits the email to the recipient's incoming email server MI; before making the email available for the recipient R, the incoming server MI contacts the Email Chief C in step 3, by sending an encoded string which contains the sender's email address, the recipient's email address, MI's identification code, the sender's fingerprint key (if provided); if the Email Chief C can match the fingerprint key with the one in the record for the given email address, it will, either deduct the appropriate amount of Pass points of the sender S if the recipient R's email address does not share the same domain as the sender, or deduct the appropriate amount of Dom points of the sender S if the recipient R's email address shares the same domain as the sender; and, in step 4, send an acknowledgment to the incoming email server MI or the recipient's email client software to instruct it to make the email available for downloading; in step 5, when the recipient R checks his or her email, the email will be delivered to him or her. On the other hand, if in step 3, the Email Chief C can not find the fingerprint key, or the fingerprint key is invalid, the Email Chief C will send an email to the original email sender S asking S to validate the fingerprint key at C; the validation request is sent through steps 6 and 7; in step 8, the sender S accesses the Email Chief C's web site and enters the correct fingerprint key. After a successful validation, the Email Chief C can then continue with step 4 to acknowledge making the email available for downloading at the incoming email server MI; if in step 3, the sender runs out of Dom points, Pass points get deducted instead; and if both Dom and Pass points are out, he or she can elect to purchase Ad Points or Safe Points, depending on his or her needs. If step 8 is never carried out or not carried out satisfactorily, and the email server MI is not able to receive an acknowledgment, the email server MI or email client software can elect to delete the email after a certain period of time or to add a flag to the message and let the recipient choose further actions.

[0065] In the preferred embodiment, the fingerprint key is a string chosen by the email sender during registration. The fingerprint key is typed in the body of the email as if it is part of the email message. Each fingerprint key shares a common characteristic with all other fingerprint keys. It is this common characteristic which makes the fingerprint key recognizable by this invention's software that is installed on the email server MI. Prior to releasing the email to the recipient R, MI removes the fingerprint key from the email, and therefore it is not seen by the recipient R.

[0066] In the preferred embodiment, two methods are available to safeguard the Ad points from being stolen during the transmission of the Ad email. In the first

method, the email marketer is required to logon to the Email Chief's web site to send the Ad email through the site's web page. In addition, the email marketer would have to purchase Ad points for each mailing, i.e., buying one batch of Ad points good for sending one email to a list of recipients once; and sending the same email again would require the purchase of a new batch of Ad points. In the second method, the email marketer would use a digital signature certificate generated by cryptographic software, as is well known in the art, for the authentication of the Ad email.

- [0067] In another embodiment of the present invention, the fingerprint key expires periodically and a new fingerprint key is automatically generated for the registered user.
- [0068] In another embodiment of the present invention, the function of holding the email and communicating with the Email Chief can be done by the recipient's email client.
- [0069] In another embodiment of the present invention, if step 8 is never carried out, the email server can elect to edit the email by adding a flag in the header of the email, and let the recipient decide what to do with the email. The recipient can elect to write a rule of filtering in his or her email client software to filter the emails with the flag to a separate folder or to delete it directly.
- [0070] In another embodiment of the present invention, the email server MI can elect to make available the email for the recipient immediately and then communicate with the Email Chief C.
- [0071] In another embodiment of the present invention, the recipient's threshold value for charging paid Ad Points can be omitted from the system, and all anti-spam points, whether free or purchased will be treated the same way, and each delivery of an email will result in a deduction of a predetermined fixed or varied number of points from the email sender.
- [0072] In another embodiment of the present invention, if a sender has not registered with the Email Chief, either the Email Chief or the incoming email server of the recipient would send an email to notify the sender that his or her email is on-hold and will not be delivered until he or she registers at the Email Chief,

and would let him or her know the time and date of when the email would be deleted from the system.

[0073] The method and system of the present invention may also be implemented in combination with one or more inclusion-based or exclusion-based methods as would be apparent to one of skill in the art.

[0074] While the present invention has been particularly described with reference to the preferred embodiment, it should be readily apparent to those of ordinary skill in the art that changes and modifications in form and details may be made without departing from the spirit and scope of the invention. While alternative constructions and equivalents may be used, the above description and illustrations should not be taken as limiting the scope of the present invention which is defined by the appended claims.